

Talent on the move

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Valorisation

In accordance with article 23.5 of the Regulation governing the attainment of doctoral degrees at Maastricht University, this section discusses the valorisation opportunities of this doctoral thesis. I discuss these opportunities in terms of the social-economic relevance of the thesis, the potential target groups to whom the results can be interesting, the degree of innovativeness of the research methods used, and the activities and products which it triggered.

Socio-economic relevance. Although this thesis is mainly an academic work, its results have a social and economic relevance which goes well beyond the pure scientific one. The mobility of the highly educated has dramatically increased in recent years and graduates currently represent the most mobile segment of the population both interregionally and internationally. Focusing on highly educated mobility is particularly relevant because - due to the knowledge and skills they carry with them - their spatial movements can affect innovative and economic performances in the regions and countries of origin and destination. This is in fact the focus of two central Chapters of this thesis (Chapters 3 and 5), which analyse the knowledge flows which may be generated by mobile degree-holders and the impact they can have at the firm, individual, and scientific system level. Next to educational policies aimed at strengthening the school attainment of their citizens, many governmental and non-governmental institutions have been making considerable investments to promote highly skilled mobility in the developed and developing world. The Marie Curie Programme in Europe, the Colombian Colfuturo, the Brazilian Capes, or the Mexican Conacyt fellowships for graduate students are just some examples of schemes providing domestic graduates and researchers with scholarships to study and do research abroad. Less diffused but increasingly more common are also programmes or scholarships which promoted interregional graduate mobility, such as the Master & Back scheme offered by the Sardinia Region in Italy, which covers the cost of post-graduate studies in other regions and provides incentives to come back and work in Sardinia upon completion of the studies. Despite the relevance of this topic, the studies investigating the economic consequences of interregional and international migration remained rather scarce. This thesis provided new insights to better understand the extent to which the mobility of the highly skilled contributes to their economic and scientific performances, as well as to those of the firms, country and scientific systems they are part of. By broadening the understanding of the effects of human capital and degree-holders' mobility at the individual, firm and country level, it connects education, innovation and economic policies.

Target group. This thesis has two main types of targets. First, the methodological and empirical contributions of this dissertation can be of interest to the academic community, especially to researchers in the fields of education, innovation, and economic geography. Secondly, this thesis speaks to policymakers as well as practitioners in non-governmental organizations and other international organizations

which are engaged in research policy dialogues to promote educational achievements, innovation and socio-economic development.

Degree of innovativeness. The thesis presented a variety of novel insights and methods. First, it provided valuable indicators which can help, not only researchers, but also policymakers and practitioners which can use them to monitor and benchmark their policy efforts. Chapter 2 computed a novel measure of sectoral human capital defined as the average sectoral cognitive skills of the workers operating in each country-sector combination. Previous data on human capital by sector relied on direct or extrapolated measures of workers' school attainment. This new indicator provides a more accurate measure of the actual human capital that is present in the different economic sectors: in fact, the basic building blocks of human capital are represented by the skills and not by the number of years spent in school. In Chapter 5, in order to identify the degree to which researchers can contribute to local academic upgrading, we quantified the extent to which each researcher can tap into global knowledge and facilitate its transmission locally. This was done by computing a gatekeeping index which measures both the researcher's access to outside knowledge (bridging-component) and his or her distance to other local researchers (bonding-component) in the network of co-authorships. This index can be useful not only for research purposes, but it could also provide valuable information for assessing the quality of the local scientific systems and of their researchers. Additionally, the structural models used in this thesis provided further methodological contributions. Only a few approaches to productivity analysis have attempted to empirically estimate the weights associated to different types of labour within a Cobb-Douglas framework. The model used in Chapter 3 contributed to this literature by expanding the classic Cobb-Douglas production function in order to account for three different kinds of labour (i.e. local graduates, interregional or non-local graduates, and workers without tertiary education) and by testing it empirically through econometric panel data techniques. Thirdly, by encompassing different scales of analysis – i.e. by going from a macroeconomic analysis of economic development, describing the role of human capital for countries' and sectors' economic performances, to a microeconomic one, examining the effects of graduate mobility on individuals' and firms' outcomes - this thesis allowed the reader to have a better understanding of central microeconomic linkages to endogenous macroeconomic growth.

Activities and products. In terms of diffusion of the research, all the contributions of this work have been presented at academic international conferences as well as at important policy dialogue meetings. These events have represented precious opportunities not only to disseminate the findings but to get important suggestions to further improve and fine-tune the research. Results have been presented at the DRUID Academy Conference in Alborg (Denmark) in January 2014, at the KID Summer School on Knowledge Dynamics Industrial Evolution, and Economic Development in Nice (France) in July 2014, at the HDCA Conference on Capabilities on the Move in Washington D.C. (USA) in September 2015, at the BRICK Workshop in Economics of Innovation, Complexity and Knowledge in Turin (Italy) in January 2016, at the World University Network (WUN) Conference in Maastricht (Netherlands) in April 2016, at the GCW Conference on Innovation, Employment and the Environment in Valencia

(Spain) in June 2016, at the DRUID 20th Anniversary Conference in Copenhagen (Denmark) in June 2016, at the 9th Conference on Model-based Evidence on Innovation and Development (MEIDE) in Moscow (Russia) in June 2016, at the OECD Blue Sky Forum in Ghent (Belgium) in September 2016, at the UNU-MERIT Annual Conference in Maastricht (Netherlands) in June 2017, and at the 10th Model-based Evidence on Innovation and Development (MEIDE) Conference in Montevideo (Uruguay) in November 2017. Chapter 2 has been published as an IZA Discussion paper. Chapter 2, 4, and 5 are currently being readapted to be submitted and published in international peer-reviewed journals in the fields of education, innovation, and regional development.